$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

and, $\bar{x}$ is the sample mean; n is the number of samples; and x_i is the i^{th} sample;

Or,

(B) The lower 97½ percent confidence limit (LCL) of the true mean divided by 0.95, where:

$$LCL = \bar{x} - t_{.975}\left(\frac{s}{\sqrt{n}}\right)$$

And $\bar{x}$ is the sample mean; s is the sample standard deviation; n is the number of samples; and $t_{0.975}$ is the t statistic for a 97.5% one-tailed confidence interval with n-1 degrees of freedom (from Appendix A).

(b) *Certification reports.* (1) The requirements of § 429.12 are applicable to dishwashers; and

(2) Pursuant to § 429.12(b)(13), a certification report shall include the following public product-specific information: The estimated annual energy use in kilowatt hours per year (kWh/yr) and the water consumption in gallons per cycle.

(3) Pursuant to § 429.12(b)(13), a certification report shall include the following additional product-specific information when using appendix C or appendix C1: the capacity in number of place settings as specified in ANSI/AHAM DW–1–1992 when using appendix C (incorporated by reference, see § 429.4) and ANSI/AHAM DW–1–2010 when using appendix C1 (incorporated by reference, see § 429.4), presence of a soil sensor (if yes, the number of cycles required to reach calibration), and the water inlet temperature used for testing in degrees Fahrenheit (°F). When using appendix C1, additionally: the cycle selected for energy testing and whether that cycle is soil-sensing, the options selected for the energy test, and presence of a built-in water softening system (if yes, the energy use in kilowatt-hours and the water use in gallons required for each regeneration of the water softening system, the number of regeneration cycles per year, and data and calculations used to derive these values).

[76 FR 12451, Mar. 7, 2011; 76 FR 24766, May 2, 2011, as amended at 77 FR 31962, May 30, 2012; 77 FR 65977, Oct. 31, 2012]

§ 429.20 Residential clothes washers.

(a) *Sampling plan for selection of units for testing.* (1) The requirements of § 429.11 are applicable to residential clothes washers; and

(2) For each basic model of residential clothes washers, a sample of sufficient size shall be randomly selected and tested to ensure that—

(i) Any represented value of the water factor, integrated water factor, the estimated annual operating cost, the energy or water consumption, or other measure of energy or water consumption of a basic model for which consumers would favor lower values shall be greater than or equal to the higher of:

(A) The mean of the sample, where:

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

and, $\bar{x}$ is the sample mean; n is the number of samples; and x_i is the i^{th} sample;

Or,

(B) The upper 97½ percent confidence limit (UCL) of the true mean divided by 1.05, where:

$$UCL = \bar{x} + t_{.975}\left(\frac{s}{\sqrt{n}}\right)$$

And $\bar{x}$ is the sample mean; s is the sample standard deviation; n is the number of samples; and $t_{0.975}$ is the t statistic for a 97.5% one-tailed confidence interval with n-1 degrees of freedom (from Appendix A).

and

(ii) Any represented value of the modified energy factor, integrated modified energy factor, or other measure of energy or water consumption of a basic model for which consumers would favor higher values shall be less than or equal to the lower of:

(A) The mean of the sample, where:

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

and, $\bar{x}$ is the sample mean; n is the number of samples; and x_i is the i^{th} sample;

Or,

(B) The lower 97½ percent confidence limit (LCL) of the true mean divided by 0.95, where:

$$LCL = \bar{x} - t_{.975}\left(\frac{s}{\sqrt{n}}\right)$$

And $\bar{x}$ is the sample mean; s is the sample standard deviation; n is the number of samples; and $t_{0.975}$ is the t statistic for a 97.5% one-tailed confidence interval with n-1 degrees of freedom (from Appendix A).

(3) The capacity of a basic model reported in accordance with paragraph (b)(2) of this section shall be the mean of the measured clothes container capacity, C, of all tested units of the basic model.

(4) The remaining moisture content (RMC) of a basic model reported in accordance with paragraph (b)(2) of this section shall be the mean of the final RMC value measured for all tested units of the basic model.

(b) *Certification reports.* (1) The requirements of § 429.12 are applicable to residential clothes washers; and

(2) Pursuant to § 429.12(b)(13), a certification report shall include the following public product-specific information:

(i) For residential clothes washers tested in accordance with Appendix J1: The modified energy factor (MEF) in cubic feet per kilowatt hour per cycle (cu ft/kWh/cycle), the capacity in cubic feet (cu ft), the corrected remaining moisture content (RMC) expressed as a percentage, and, for standard-size residential clothes washers, a water factor (WF) in gallons per cycle per cubic foot (gal/cycle/cu ft).

(ii) For residential clothes washers tested in accordance with Appendix J2: The integrated modified energy factor (IMEF) in cu ft/kWh/cycle, the integrated water factor (IWF) in gal/cycle/cu ft, the capacity in cu ft, the corrected remaining moisture content (RMC) expressed as a percentage, and the type of loading (top-loading or front-loading).

(3) Pursuant to § 429.12(b)(13), a certification report must include the following additional product-specific information: A list of all cycle selections comprising the complete energy test cycle for each basic model.

(c) *Reported values.* Values reported pursuant to this subsection must be rounded as follows: MEF and IMEF to the nearest 0.01 cu ft/kWh/cycle, WF and IWF to the nearest 0.1 gal/cycle/cu ft, RMC to the nearest 0.1 percentage point, and clothes container capacity to the nearest 0.1 cu ft.

[76 FR 12451, Mar. 7, 2011; 76 FR 24767, May 2, 2011, as amended at 77 FR 13936, Mar. 7, 2012; 77 FR 32379, May 31, 2012; 80 FR 46760, Aug. 5, 2015]

§ 429.21 Residential clothes dryers.

(a) *Sampling plan for selection of units for testing.* (1) The requirements of § 429.11 are applicable to clothes dryers; and

(2) For each basic model of clothes dryers a sample of sufficient size shall be randomly selected and tested to ensure that—

(i) Any represented value of estimated annual operating cost, energy consumption or other measure of energy consumption of a basic model for which consumers would favor lower values shall be greater than or equal to the higher of:

(A) The mean of the sample, where:

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

and, $\bar{x}$ is the sample mean; n is the number of samples; and x_i is the i^{th} sample;

Or,

(B) The upper 97½ percent confidence limit (UCL) of the true mean divided by 1.05, where:

$$UCL = \bar{x} + t_{.975}\left(\frac{s}{\sqrt{n}}\right)$$

And $\bar{x}$ is the sample mean; s is the sample standard deviation; n is the number of samples; and $t_{0.975}$ is the t statistic for a 97.5% one-tailed confidence interval with n-1 degrees of freedom (from Appendix A).